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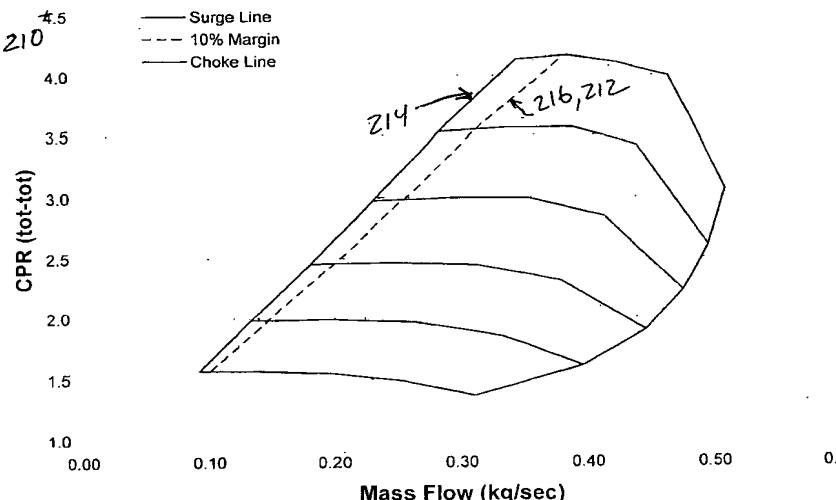
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(54) Title: TURBO-CHARGER SURGE DETECTION

Compressor Map



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(57) Abstract: A method of turbo-charger surge detection may include the steps of measuring a rate of air flow through a turbo-charger compressor, measuring a temperature of the air flow, calculating a standard mass flow rate of the air flow at the rate and the temperature, measuring a pressure ratio across the turbo-charger compressor, calculating a surge mass flow rate at a surge line of the compressor at the pressure ratio, comparing the standard mass flow rate to the surge mass flow rate, and reducing an EGR flow or reducing the pressure ratio by opening a vane of the compressor if the standard mass flow rate is lower than the surge mass flow rate.



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